

Published in the interests of Amateur Radio
by the W.I.A. (Vic. Div.), Official Organ
of all divisions of the W.I.A.,
and the R.A.A.F. Wireless Reserve



PRICE
6^d

SEPTEMBER, 1936



HOMECRAFTS PTY.
LTD.

211 Swanston Street

The Original Radio Suppliers offer—

**Special NETT
PRICES to HAMS!**

**Make Money in your Spare
Time!**

Your Recommendation carries weight with prospective Radio Buyers.

**You can sell Radio Sets and make a
Good Profit . . . !**

Consult Homecrafts now for Discounts and special "Ham's" Sales Proposition.

Famous Astor

. . . Model 77

Ideal Countryman's Radio used no B or C Batteries.

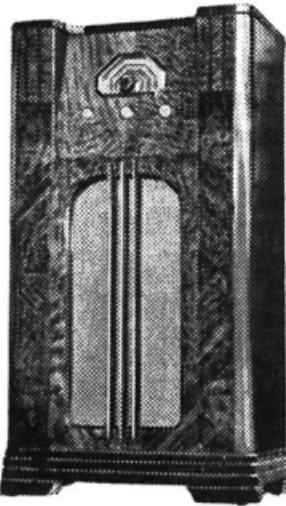
PRICE 30 Guineas

Also available in dual wave model

Liberal Discount



Full range of latest type of all Electric Receivers. Prices range from New '36 Mickey Grande £14-19-6 & 19 gns. for New Metal Tube Dual Wave Console to 33 gn for De-Luxe 7 valve dual wave.



HOMECRAFTS PTY. LTD.

211 Swanston Street, Melbourne, C.1 PHONE CENT. 8200

AMATEUR RADIO

Published by the Wireless Institute of Aust., Victorian Division.

Vol. 4 No. 9

1st September, 1936.

INDEX

Federal and Victorian QSL Bureau ...	15	Divisional Notes.—	
Editorial	3	N.S.W. Division	16
VK3RH's Portable ...	4	Victorian Division ...	21
Radiotron 6L6 Beam Tetrode Amplifier	7	South Australian Division ...	24
Ham Radio in 2036 (A Prophecy) ...	11	Tasmanian Division ...	25
Are you Guilty?	14	R.A.A.F. Wireless Reserve Notes ...	27

Divisional Addresses:-

FEDERAL HEADQUARTERS	BOX 2127L, G.P.O., SYDNEY
NEW SOUTH WALES	BOX 1734JJ, G.P.O., SYDNEY
VICTORIA	BOX 2611W, G.P.O., MELBOURNE
QUEENSLAND	BOX 1524V, G.P.O., BRISBANE
SOUTH AUSTRALIA	BOX 284D, G.P.O., ADELAIDE
WEST AUSTRALIA	62 SUBIACO ROAD, SUBIACO
TASMANIA	BOX 547E, G.P.O., HOBART

MAGAZINE COMMITTEE:

W. R. GRONOW (VK3WG), Secretary.
 R. H. CUNNINGHAM (VK3ML), Technical.
 E. KILBORN (VK3KE), Distribution.
 V. MARSHALL (VK3UK) and C. SERLE (VK3RX).

All Communications and MSS. should be forwarded to the Editor, "Amateur Radio," BOX 2611W, G.P.O., MELBOURNE.

Subscription to "Amateur Radio" is 6/- per Annum (Post Free), paid in advance.

Should you not receive your copy of "Amateur Radio," notify your Divisional Secretary at once.

Advertising and Publishing Office: Address Publicity Manager, "Amateur Radio," Whitehorse Road, Box Hill, E.11. Phone: WX 2429.

NOTE.—ADVERTISERS' CHANGE OF COPY MUST BE IN HAND NOT LATER THAN THE 20th OF THE MONTH PRECEDING PUBLICATION.

SIEMENS ELLIOTT

British Radio Instruments

**ASSURE
ACCURACY
RELIABILITY
AND
SERVICE**



**Stocks of miniature instruments available for
D.C., A.C. and R.F. measurements in moving
coil, moving iron, thermo couple, rectifier pattern**

□

Submit your instrument problems to us

SIEMENS (AUST.) PTY. LIMITED



Editorial

We must brush aside many of the subjects listed for the editorial this month in favour of the restrictions brought into force by the P.M.G. on 1st September.

The word "restriction" is a hard word, and does not completely fill the bill when discussing the facts of the circular we all received some month or so ago. One could look upon it as being an attempt to improve the amateur's "code," without enforcing too great hardships. No unselfish and clear-thinking ham can regard the rules as being anything but for the good of the game. No law made yet has ever suited every man, and, naturally, some few will feel their style cramped. However, we must all admit that it is high time that the air be cleaned up of poor signals and bad operating. Even the selfish and rotten operator must himself feel annoyed at times when someone of the same standing causes needless QRM.

The W.I.A. has played no small part in bringing about this "clean-up," and did so because its members have been demanding something of the kind ever since Federal Conventions were first staged. Those of us who remember the annual agenda papers circulated to all Divisions prior to the convention, know only too well that "phone on 40 metres," "poor operating," and such like, were always listed, showing that the Institute has always been "for and behalf of the Amateur."

Now, in this direction we have succeeded, and every ham in VK will benefit by the co-operation between the P.M.G. and the W.I.A. Surely this speaks for the great asset of having a united body to speak for the amateur, but, to what extent does the non-member appreciate the work done for him? The W.I.A. has been an philanthropic institute for a fair number of hams to an extent that perhaps many are apt to overlook. It is rather hard to imagine that there still exist a few that ask what does the advantage of W.I.A.

membership offer them? One does not have to look much further than the International DX contests, organised field days, QSL bureaux, or the W.I.A.'s share in the Cairo affair, to realise that there are many hams enjoying privileges that do not rightly belong to them, because they are not members of the body that represents the amateur of Australia. Such a position is not exactly fair to members of the W.I.A. and affiliated societies who have to carry their own troubles as well as those of the rest of the Commonwealth. It is for the present members to bring such facts before any non-member that they happen to contact, and point out the reasons why they should support the Institute. There are many small gangs of chaps who work together on some particular section of amateur radio without realising perhaps that the W.I.A. caters for all sections in its organisation. A case such as those was noted only the other day during a QSO, when a certain ham told a member that he and four others were working together on 56 mc, and were looking for stations in other areas to contact. On explaining that the W.I.A. had an Ultra High Frequency group already formed on well organised lines, this ham immediately became interested, and accepted the invitation to attend the next meeting of the U.H.F. section. That may mean the enrolment of four new members.

Publicity is something that takes up a tremendous amount of time, and for the moment the executives have their hands full in other directions, and it is therefore for the individual member to help rope in the non-members. If every present member managed to introduce just one new face each it would obviously mean that every ham in VK plus dozens of S/W people would be a M.W.I.A. Talk it over with your neighbour OM, and if he is an outsider it is up to YOU to make him W.I.A. conscious.

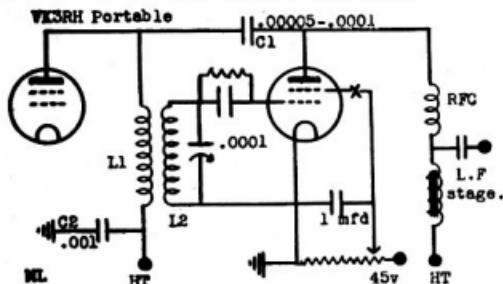
VK3RH'S Portable

(By VK3ML, Technical Editor.)

The write-up of VK3RH's portable station in the July issue has proved of great interest to many a ham, and further information has been sought regarding a few of the constructional points. We prevailed on Ivan Ho'der to supply same, together with circuits, and here they are.

Fig. 1 clearly shows the unusual method of coupling the RF stage to the detector. The system has been

The main object is to design L2 so that the correct amount of RF transfer is obtained, and also that the reaction effect should be smooth. The coil data shown is only a rough guide, for circumstances will alter cases, but in the majority of sets built by 3RH the ratio of primary to secondary turns has been similar to those shown. Another point that will require a bit of cut and try



tried at a few other stations since July, and has proved most effective. Probably one main advantage is that it requires only a four-pin former for the detector coil. Coil L1 acts as an RF transfer to L2 in the usual way, while feed-back from the detector is obtained via the coupling capacity C1, and the RF is by-passed

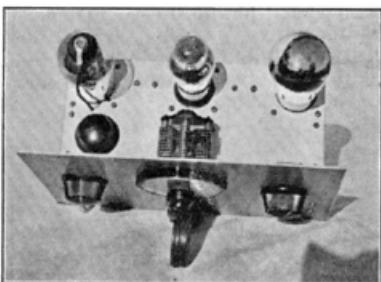
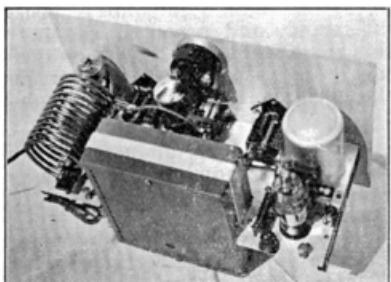
COIL DATA

All windings on Marquis formers: 24 S.W.G. Wire.

	L1	L2
7mc	6 turns at 5 turns for bandspread	21 turns; tapped
3.5mc	13 turns	23 turns un-tapped

system is the size of the feed-back condenser C1. If this is too big oscillation will come in with a flop, and if not large enough then no reaction will take place. It is suggested that a .0001 mfd variable midget condenser be installed to locate the optimum capacity.

If grid leak detection is being used



by C2 in the usual way. The fact that L2 is doing two jobs does not in any way appear to introduce undesirable effects, and the circuit behaves as if a separate tickler coil was in use.

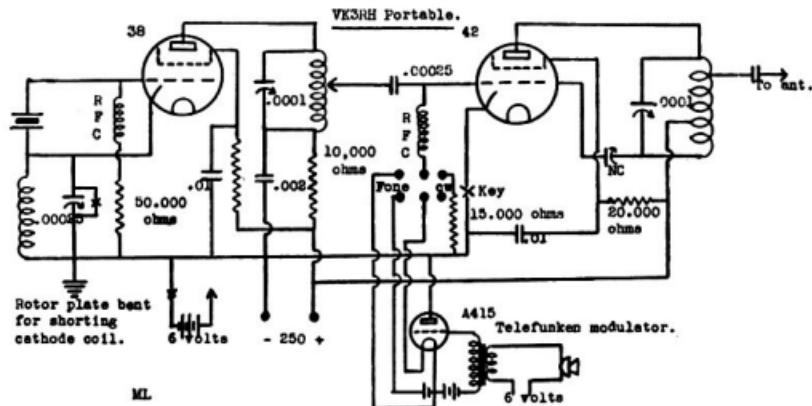
the resistor will not be very critical, and a 5 megohm leak should suffice, in conjunction with a grid condenser of .0001 mfd.

Feed back is obtained in the screen of the tube using a 25,000 or 50,000

ohm potentiometer shunted by a .2 mfd condenser to eliminate noise. If heater type tubes are used feed back may be obtained from the screen of the tube, if oscillation by means of the plate feed back is too violent. Instead of coupling C1 to the plate of the tube, connect it to the screen at "x." This will not work with battery tubes owing to the low screen current, and therefore lack of feed back energy. If this is done, then the plate will have to be by-passed

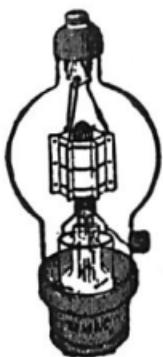
direct to the chassis via a .001 mfd condenser.

Fig. 2 shows the transmitter portion of the works as depicted in the photos. 3RH has suggested the use of the new 6P6 valve in place of the 42 with suppressor grid modulation. The efficiency should be increased considerably by its use. The original article dealt rather fully with the transmitter, and readers are referred to the July issue for full details of this very efficient portable outfit.



Eimac

The Ideal Ham Tube



35T	£4 - 2 - 6
50T	£6 - 8 - 0
150T	£11 - 5 - 0

Please add 3/- fragile postage



for — National Transmitting Equipment;
Birnback Insulators; Bliley Crystals;

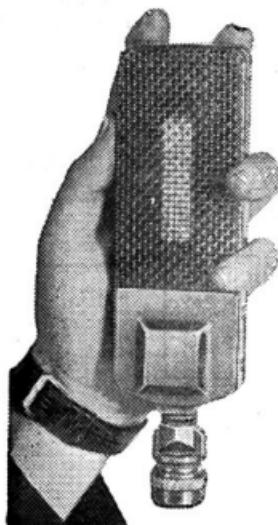
Send for Catalogue —

ELECTRONIC COMMUNICATIONS LIMITED
Box 300 P.O. Newcastle, N.S.W.

AUSTRALASIAN ENGINEERING EQUIPMENT CO.
PTY. LTD.

"Evans House" 415 Bourke Street, Melbourne, C.1

"Bruno" Velocity Mike



as used by
Leading American
Stations

LIST PRICE £10-10-0

FULL PARTICULARS ON
APPLICATION

Has a Frequency response plus or minus db from
50 to 12000 cycles

BIRNBACH PORCELAIN INSULATORS

"BIRNBACH" Insulators are made in White and Brown Porcelain. Types with prefix J denote Jack Type for Standard G.R. Plug. All others are fitted with Scr. k.

For a Special Quote on these lines SEE US.

Type	Height	Price	Type	Height	Price
458	1	1/8	866	1 5/16	1/8
478	2	2/6	866J	1 5/16	2/-
478J	3	3/-	966	1in.	1/2
4125	1 1/2	3/-	966J	1in.	1/6
4125J	1 1/2	3/6	400	G.R. Plug	1/6



FINE GRANULE MICROPHONE CARBON

We have small supplies of this carbon in stock, of the Polished Granule Type which we can sell to Amateurs only at 12/6 an ounce nett.

Radiotron 6L6 Beam Tetrode Amplifier

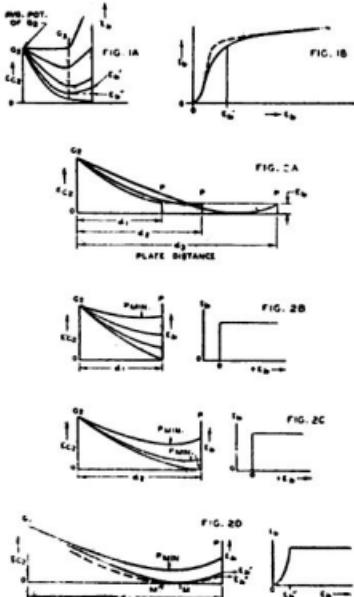
Radiotron 6L6 is a new type of tetrode intended for use in the power output stage of an A.F. amplifier. Unlike most earlier double grid valves, the 6L6 does not exhibit any secondary emission effects at low plate and control grid voltages; its characteristics, therefore, resemble those of the usual power output pentodes. Some unique features of the 6L6 are high power

the usual tetrode should not swing below the screen voltage if the output is to be substantially free from distortion. A zero potential suppressor grid (G3), positioned between screen (G2) and plate (P), serves to prevent the loss of plate current due to secondary emission. Hence, in a pentode, the plate voltage (E) can be made less than the screen voltage (E_{g2}) without appreciable secondary emission effects.

The manner in which a suppressor prevents secondary emission loss in plate current can be explained by Fig. 1A. When the suppressor is connected to the cathode, the potential of the suppressor wires is zero, and the potential of the spaces between the wires is positive by an amount depending upon the geometry of the valve and the applied voltages. The effect is, therefore, to reduce the potential at all points between the screen and plate. Fig. 1A shows the approximate potential distribution between the screen and plate of a pentode for various plate voltages. When E_b is greater than a certain critical value (E_{b1}) a potential minimum is formed in the vicinity of the suppressor. When the difference between the plate voltage and the potential at the suppressor ($E_b - E_{b1}$) is great enough, secondary electrons from the plate are not attracted to the screen, but return to the plate. Consequently, for all values of E_b greater than E_{b1} , there is no appreciable loss in plate current due to secondary emission. Under these conditions the plate current is nearly independent of plate voltage.

Fig. 1B shows the plate characteristic of a typical pentode. The knee between E_b and E_{b1} is rounded, due mostly to the non-uniformity of the field around G3, giving no definite value of E_{b1} , where the plate current begins to become independent of plate voltage.

There are several other factors which govern the sharpness of the knee, such as the shapes, sizes and



output, high efficiency, and high power sensitivity.

THE PENTODE SUPPRESSOR GRID.

When the plate voltage of the usual tetrode is less than the screen voltage, an appreciable number of secondary electrons which are emitted from the plate because of bombardment by primary electrons are attracted to the screen; the plate current, therefore, is greatly reduced. For this reason the plate voltage of

uniformity of the grids and cathode. Much of the distortion of the field occurs at the grid side rods. The ideal curve (dotted in Fig. 1B) would

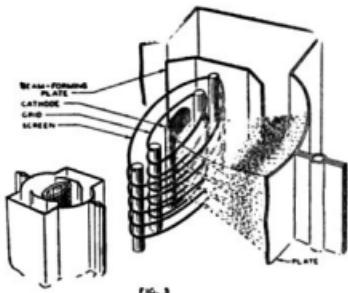


FIG. 3

SKETCH SHOWING FORMATION BY GRID WIRES OF BEAM SHEETS

have a greater usable range of plate voltage, with reduced third-harmonic distortion.

The 6L6 dispenses with a physical suppressor in order to reduce secondary emission effects. Suppression is obtained by creating a potential minimum between G2 and plate by space charge effects. The electron stream to the plate is confined to a beam whose electrons have nearly uniform path lengths and velocities. Such a design results in a plate characteristic that has a relatively sharp knee at low plate voltage.

THE VIRTUAL CATHODE.

If we had a valve in which each electron traversed the same distance in the same time on its journey from cathode to plate, many of the pentode difficulties could be obviated. Consider such a tetrode. Apply a voltage to its screen, and a lower voltage to its plate. Shifting the plate further from the screen under those conditions gives a set of potential grade curves as in Fig 2A. After a distance D1, there is found to be a point of minimum potential between screen and plate, which tends to repel secondary electrons, preventing their passage to the screen.

In simpler words, the cloud of electrons set free by bombardment of the plate has been served out beyond the reach of the screen grid's positive field. If, then, the plate voltage is increased, the cloud extends further inward towards the grid, but owing to the increased intensity of the plate's positive field, it is not suffi-

ciently negative to set up a current from plate to screen, but simply retards the normal flow of plate current, making it practically independent of plate voltage. Below the critical voltage, at distances of either D1 or D2 (Figs. 2B, 2C), the cloud is not present in any large extent, its electrons being drawn to the screen grid, by its positive potential. Thus there is a sharp falling off of plate current at a critical voltage, after which a negative current may flow. By increasing the distance to D3 (Fig. 2D) it is found that a region of minimum potential, M1, M, P min, exists for all values of plate potential, and that the cloud of electrons is always present, even at very low values of plate potential. Thus the field between the plate and screen has a region of low potential which effectively prevents the production of further secondary electrons, in much the same way as the suppressor of a pentode. The resulting tetrode, however, has a much sharper knee at Eb1, in Fig. 2D, than has a pentode.

The cloud of electrons near the positively charged plate is, in effect, a virtual cathode, the position of which is changed by varying the control grid voltage or the plate potential. With the correct screen to plate distances, the potential of P min can be made just enough to suppress secondary emission effects. The plate then acts as a diode plate, which reaches a saturation current when its potential reaches Eb1, after which there remains an almost constant potential grade between the virtual cathode and plate.

If the screen voltage is reduced, or the control grid voltage made more negative, the density of the cloud of electrons becomes less, and the diode saturates at a lower value of plate voltage. The voltage at which the knee occurs depends either on the screen voltage or the control grid bias.

RADIOTRON 6L6.

To simulate the ideal conditions of the hypothetical valve discussed above, the electron streams must be focussed into some form of parallel "beams." In the 6L6, this has been done by carefully winding the two grids with the same pitch, and even more carefully aligning them so that each turn of the screen grid lies

Amateur Radio

exactly outside that of the control grid, along a line perpendicular to the cathode.

in the 6L6, two side plates, called "beam-forming plates," have been placed at the sides of the grids in the

TABLE 1
SUMMARY OF OPERATING CONDITIONS FOR THE 6L6

Condition	SINGLE-VALVE OPERATION								PUSH-PULL OPERATION								
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10							
Class of Operation*	A ₁	A ₁	A ₁	A ₁	A ₁	A ₁	A ₁	A ₁	A ₁	A ₁	F ₁	F ₂	F ₃	F ₄	F ₅	F ₆	
Kind of Bias	Fixed	Self	Fixed	Self	Fixed	Self	Fixed	Self	Fixed	Self	Fixed	Self	Fixed	Self	Fixed	Self	
Plate Volts ^a	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	
Plate Volts	375	375	200	200	200	200	250	250	375	375	200	200	200	200	200	200	
Screen Volts	125	125	200	200	200	200	250	250	250	250	200	200	200	200	200	200	
D.C. Grid Volts ^b	-6	-6	-11.5	-11.5	-11.5	-11.5	-14	-14	-17.5	-17.5	-16	-16	-19	-19	-23.5	-23.5	
Peak A-F Grid Volts	8	8	11.5	11.5	12.5	12.5	14	14	17.5	17.5	20	20	20	20	20	20	
Zero-Bias D-C Plate Current (mA.)	24	24	52	55	49	61	72	75	47	120	120	88	96	102	112	98	102
Max.-Bias D-C Plate Current (mA.)	26	24.3	57	56	65	54.5	79	76	67	140	130	124	115	162	128	168	230
Second-Harmonic Plate Current (mA.)	0.7	0.7	3.5	4.2	2.6	3	6	5.4	2.5	10	10	4	4.6	6	7	4	6
Max.-Bias D-C Screen Current (mA.)	2	1.8	5.7	5.6	4.7	4.6	7.3	7.2	6	15	15	12	10.8	17	16	13	20
Load Resistance (Ohms)	14000	14000	3000	3000	4600	4600	2500	2500	3600	3600	5000	5000	5000	5000	6600	6600	36000
Distortion - Total %	9	9	9	9	11	11	10	10	14.5	2	2	2	2	2	2	2	2
- 2nd Har. %	8	8	8.7	8.7	10.7	10.7	9.7	9.7	11.5	-	-	-	-	-	-	-	-
- 3rd Har. %	4	4	2.5	2.5	2.5	2.5	2.5	2.5	4.2	2	2	2	2	2	2	2	2
Max.-Signal Power Output (Watts)	4.2	4	4	4	6.5	6.5	6.5	6.5	11.5	14.5	13.8	26.5	34	32	40.8	50.4	
Power Sensitivity (Millivolts/volt)*	171	111	60.6	60.6	63.3	63.3	66	66	75.1	26.6	21.8	33.1	26	27.2	19.7	34.6	16.8
Efficiency (%)	42	42	19	32	37.5	37.5	37	30	30.6	42.3	37.2	38.3	50	52	51.6	58	58.8
Power Grid-Input Power (Watts)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180 ^c	380 ^c
Stand Resistor (Ohms)	-	300	-	165	-	220	-	170	-	-	125	-	180	-	300	-	-

* Harmonic distortion less than grid current does not limit swing and part of stage's operating range is available.
** Distortion is measured at 100% plate voltage.
^a With zero-bias grid and perfect regulation, instantaneous distortion does not exceed 10% at 100% plate voltage. At 100% plate voltage, distortion is 10% at 100% power output.
^b Grid bias required should be no greater than 24, 26, or 28, depending on the class of operation.
^c An output of 30 watts can be obtained at the grid-current values of Condition 9.

* When the grid is connected as negative feedback, the feedback voltage should not exceed 100 millivolts.

^b Grid bias requirement in the grid circuit should not exceed 0.1 volt for linear operation over 0.1 megohm for half-wave operation.

For A-F operation:

1. Plate to grid.

2. Plate to screen.

3. Screen to ground.

4. Screen to plate.

Driver stage should be capable of dissipating total power to the grids of the driver and the 6L6. The power dissipation in the 6L6 should not exceed 100 watts. The stage should be held below 200 ohms and the effective impedance at the highest desired frequency should not exceed 100 ohms.

For F operation:

1. Plate to grid.

2. Plate to screen.

3. Screen to ground.

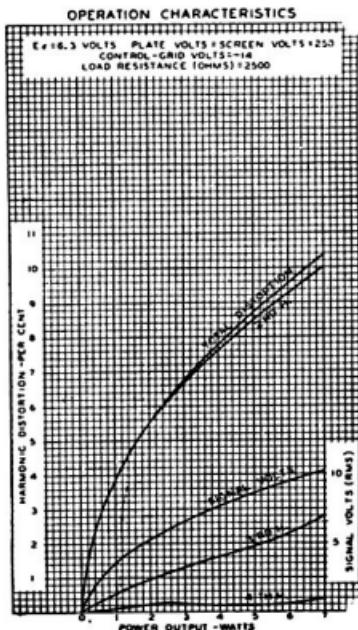
4. Screen to plate.

Driver stage should be capable of dissipating total power to the grids of the driver and the 6L6. The power dissipation in the 6L6 should not exceed 100 watts. The stage should be held below 200 ohms and the effective impedance at the highest desired frequency should not exceed 100 ohms.

In pentode valves, the grid side rods do much to disturb the field near the plate. To overcome such effects plane of the virtual cathode, as shown in Fig. 3. Being held at cathode potential, these plates effectively screen the plate from the field of the side rods of the screen grid, and deflect the "beams" into paths very nearly perpendicular to the axis of the cathode after passing the screen. Fig. 3 illustrates the combined effect.

It must be noted that the screen current is greatly reduced, as few electrons flying from the cathode are caught by its field. A saving of overall power input thus results, and the efficiency is high. The careful design of the valve generally, coupled with the large cathode, has given a very high value of mutual conductance—4300 micromhos, at 175 volts screen and a negative control grid bias of 12.5, and 250 volts plate potential. The sensitivity for this reason is very high, and only small grid swings are necessary for high output under most conditions.

While the overall distortion for a given output is less with Radiotron 6L6 than a single 42 type pentode, at higher outputs, which would seriously overload the latter valve, the predominant harmonic produced by the 6L6 is the second. When used in push-pull this can be nullified, and far

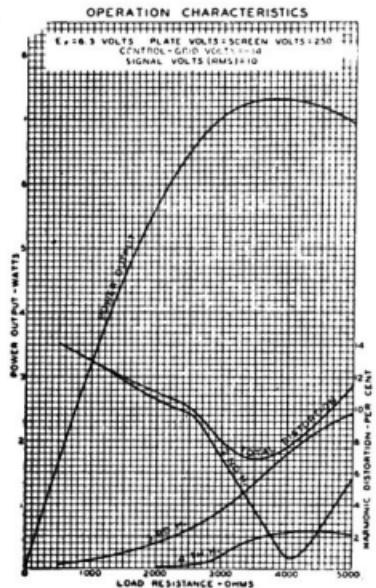


greater outputs at low distortion are possible when the valve is operating along its optimum load line.

OPERATION OF RADIOTRON 6L6.

In Table I are given a number of operating conditions, both for single valve and push-pull.

Conditions Nos. 1, 2, 6 and 7 are those most likely to be used by receiver manufacturers, who must necessarily consider the required



power input to plate. The power supply is most generally the limiting factor.

Condition 6, giving 14.5 watts output with 2 per cent. distortion, and with a grid swing of 32 volts peak, should prove of service in any large receiver. Where fidelity is required, there must always be a reserve of output power. Radiotron 6L6 offers a method of obtaining that without resorting to abnormally high voltages.

The other conditions, Nos. 3, 4, 5, the maker of P.A. equipment or 8, 9, 10, should prove very useful to cinema sound equipment.

NEW ADVERTISER!

The careful attention of readers is directed to the advertisement in this issue of the P. and L. Wireless Supplies Pty. Ltd. of 31 Hardware St. Melbourne. This enterprising firm can satisfy all Ham's requirements, and invite you to write them for a price list. So—its up to you!

NOW READY! VEALLS NEW Catalog

Just off the press — right up to the minute — the biggest Radio and Electrical Catalog published in Australia.

76 Pages
500 Illustrations

Every page packed with illustrations and descriptive matter of interest to all Hams. Write for your copy today.

Merely enclose a 2d. stamp to defray postage — the Catalog is Free.

VEALLS 4 Big Stores

Everything Radio & Electrical

243-249 Swanston St., Melbourne
168 Swanston St., Melbourne
299-301 Chapel St., Prahran
3-5 Riversdale Rd., Camberwell
Cent. 3058 (6 lines), 10524,
Wind. 1605, W 5160.

Ham Radio in 2036 — (A Prophecy)

(R. Glassop, VK2RF.)

Jim leant back in his shack chair, removed his cans and massaged his ears gently to restore circulation. He felt very pleased with himself, by which you might guess the rig had been getting over to his satisfaction. A glance at his log would have confirmed your judgment. Six QSO's, including four continents, not to mention a new country, all worked within two hours, was the tale it told. What ham with a license dating back only three months would not have felt equally pleased?

A clock struck in the next room with a single reverberating stroke. Jim gave a start at this intimation that the time was 1 a.m., and only then began to realise how sleepy he felt.

A fire was still smouldering in the comfortably warm shack, and Jim settled a bit lower in the chair, half closed his eyes, and let his thoughts roam unhindered. And, as anyone can guess, he was thinking about how good he was at working DX.

"Not such a bad effort," he thought, "with all reports T8 or 9 and at least R6. These electron-coupled oscillators can push out a good note if you go about it in the right way. Wonderful the advances made in the game the last few years. I suppose if a fellow had worked that string I got to-night about fifteen years ago they'd have thought him a marvel; but when you look at it that way, I suppose that I'd open my eyes if I could see a ham station of the future. Say a hundred years from now. A hundred years—a hundred years."

"A hundred years," a voice was saying, as Jim opened his eyes, "that's how long you've been asleep. You've been here in the ham section of the museum all this time. I'm the caretaker, and just noticed you stirring as I was locking up for the night."

"I can hardly believe it," said Jim, "is it really 2036."

"Yes," 2036," said the caretaker. "What a change you'll notice. They'll be asking you to give your impres-

sions at one of the television stations in no time."

"So television is here at last," exclaimed Jim.

"Yes," the caretaker chuckled, "we don't have newspapers now. We see events as they happen all over the world. But I suppose the first thing you want to see is a ham shack."

"You bet," cried Jim enthusiastically; "you must have elaborate shacks now. Where's the nearest ham?"

"Oh, I'm a ham," remarked the caretaker, though Jim noticed that the way he said it did not appear to suggest much pride in his ham status. "I'm VK2XFG8K2."

"What a long call!" said Jim. "What's the idea?"

"Well, there are two million licenses in Australia now, so it's necessary."

"Holy smoke. How do you get through the QRM?"

"There isn't any QRM now. Our automatic receivers can copy through any interference."

"Well, that's a help. Now where's your shack. I'm anxious to see it."

"It's on the 251st floor of this building. We used to be a lot higher, but the missus used to get nervous at the height."

"Cripes, what a skyscraper! By the way, I notice the human race hasn't changed much. All I can see different about you is that your mouth is larger, ears are flatter, and the fingers of your right hand are stumpier."

"Yes, that's the effect of a few generations of hams," replied VK2, etc. (we'll call him that for short). Big mouth from talking into mikes; flat ears, from wearing cans; stumpy fingers, from pounding brass. However, since there's been no need to do these things we're getting back to normal."

"What!" screamed Jim, "no talking into mikes, no listening, no brass pounding. How can you possibly QSO?"

"Oh, things are much easier now. Here's the shack. Come in and see for yourself."

Jim entered, prepared to see almost anything. He would not have been surprised to see twenty large relay racks end on end, tubes four feet high, and a receiver with fifty tubes. Instead, he could scarcely repress an exclamation of disappointment at the meagre amount of gear in the room. All there was, and there could be nothing hidden, was a closed box-like affair about four feet long, two feet high and two feet deep, and a panel a yard square, covered with push-buttons, each labelled.

"Everything is in the one unit now," said VK2, etc.; "it's all automatic, and controlled from this panel."

"I see," said Jim. "How different from my old rig. Now how about some technical details? Tube lineup and all that kind of thing."

"As a matter of fact, I don't know what's inside the box. It's sealed down, and can only be opened by an Amateur Station Service man, in the employ of the World Government."

"What!" howled Jim, "you didn't build it? You don't even know what's inside it?"

"No, of course I don't. You see, any form of experimenting is forbidden now. Years ago it was realised that there wasn't much left to discover, so all experimenting is now left to the Radio Development Department of the World Government. When anyone wants a ham licence he applies, pays the fee of 2/-, and the Government sends him a rig, with a pamphlet on how to work it."

Visions of hard swotting of theory, countless hours spent copying code, the A.O.P.C., 30/- fee, and the building up of his gear flew through Jim's mind. How easy it was to be a ham now. Too easy, in fact. Couldn't be so much fun in it now, he ruminated."

"When I was on the air," said Jim, "we used to get a lot of fun out of building things, having them go wrong and fixing them."

"Yes, it must have been fun," replied VK2, etc., rather enviously, "but what we've never had we'll never miss. Like to see me have a QSO?"

"Go ahead, and you might explain things to me as you go along, like a good fellow."

"Oh, there's nothing much in it. Here's how it works. As we came through the door we broke an electron beam, and that switched things on. Now, who do you want to work?"

"Cripes, is it as easy as that working anyone you want? Well, see if you can raise an EA."

"Yes, we can raise any country at any time of the day these times. Well, to raise an EA, all I do is to press this button labelled CQ, and this one EA. You'll notice that there's a button for every country, in alphabetical order. The pressing of these buttons causes an automatic CQ EA call to go out in a narrow beam straight at Spain. The box contains the antenna, by the way. The outside affairs used to get mixed up with auto. Pressing the EA button automatically points the transmitting and receiving antennas at EA."

He pressed the buttons. "The call is going out now with a thousand kilos behind it. It lasts about 15 seconds, and the transmitter automatically switches over to the receiver as it signs "K" at the end of the call. See that light that just switched on at the bottom of the panel? That means an EA station has answered. The receiver swings around the band until it finds a station calling us. Now you'll notice the light has gone out; that means he's over and we're getting back to him. By pulling the switch we give him an over."

"Very snappy," Jim remarked, flabbergasted at the ease with which everything worked. "What do you—I mean the transmitter—say to him?"

"Oh, just 'Gn om es tnx fer call—vy psd to QSO. Ur sigs hr T9 QSA5 R9 (by the way, all reports are T9 QSA5 R9 now) pse QRK? pse QSL—QRU 73 cuagn gn!'"

"Well," said Jim grimly, "I notice that rubber stamp QSO's haven't changed."

"Of course," explained VK2, etc., "by pressing this button marked 'Ragchew' we would give him a report on the weather and condx. A barometer inside the box does that. But since we were able to control the weather and make it the same everywhere it's hardly worth while. Besides, if I prolong the QSO for

Are YOU a Member of the W.I.A.? If not; Why not?

more than two minutes the other fellow may be annoyed."

"I see, just like that, eh?" Jim was beginning to feel annoyed at the easy way modern ham radio worked.

"Yes, there's nothing to get worried about now. By pulling this tray out of the box we find a slip which has printed on it all the other fellow said. Of course, it's the same as we said to him, so that in the rare case of any QRM we'll know what he said. In fact, I hardly ever bother to read it. By the way, as the transmitter signed sk at the end of the QSO, it automatically printed a QSL card, stamped it, and shot it down a chute to the mail box. The EA will get it by the high-speed plane to-morrow morning. Now, what do you think of the way we do things,

old man? Don't you wish you'd had a shack like this?"

"Not a bit of it," yelled Jim, "I wouldn't swap you for a thousand pounds. Millions of hams, practically free licenses, no technical knowledge, no building up, no operating, any DX any time; why, you're not a ham at all!"

"What!" yelled VK2, etc. "How dare you insult me? I'll teach you. Take that: and that: and that." He struck Jim on the head with his fist, in a frenzy of rage.

Jim opened his eyes. He was in his own shack, and his brother was standing beside him playfully tapping him on the head with a dud 45. "Cripes," said Jim, "I've never appreciated this station as much as I do now. Three cheers for 1936!"



QST & A.R.R.L.

One year to QST (12 issues) and membership in the American Radio Relay League, with membership diploma, all for 19/6. No waiting for the usual three months. Your Magazines begin to arrive by return post upon receipt of your remittance.

RADIO—R/9

These two magazines are now combined and the result is a work no "ham" or experimenter can afford to be without. January, February and March issues all sold; we have cabled America for more. Rush 2/- and 3d postage for April issue.

Radio Amateur Handbook 1936 !!!

Have you had your copy. Twice as large usual price 7/6 plus 1/- postage.

McGILLS AGENCY, 183-5 Elizabeth St, Melbourne

Are you Guilty?

"A few circuit details on how to make a first-class 'Lid.'"
(By "Old Hombre.")

When the thought of blasting nilly-willy into this amateur radio business first settles on the grey matter, treat it as being just a kids' hobby, with no material importance attached; it is just an alternative to keeping white mice or goldfish or something. Before any reasonable amount of technical knowledge has been acquired, slap together a few junk shop parts, with a laborious wire-to-wire following of one of those typical overseas magazine's diagrams, showing a frightful contraption dubbed "How to Make a TNT, and Talks to Hams in Timbuctoo." A license? Don't even think about that! The Radio Inspectors won't mind. The regulations are only a joke, and printed as a mere matter of form. Never mind about monitors or anything like that, and the kind of juice inflicted on the plate of that doubtful triode, picked up from a box full at a bob each, won't matter. Raw A.C. will do on the plate, and anyway—it will make some kind of a noise, won't it? Look through the call-sign lists and pick out one that sounds nice; the chap it belongs to will be quite indifferent. Or if this is not original enough, think up a rattling good "buckshee" call of your own. It will "fetch" the gang, as they will be anxious to know just who the new mysterious station is. But, of course, you won't tell 'em that, but just sign off hurriedly when asked for your QRA. Use the BCL aerial against ground (zepps and things like that attract attention), and put in several hours with the key screwed down, swishing about the band to attract attention. You will! When you start to CQ, remember that it is entirely de trop to call CQ less than at least 80 times; the call-sign need only be a badly-sent travesty, signed once, at the bitter end. Telephony? Of course. Loop modulation is so easy. Get a skinderviken mike button, or make one up with two pocket lamp carbons. Connect this to

a turn or two of thin wobbly wire, jammed right up against the tank. It will modulate—somehow, and some other similar genius is sure to report on your good quality. After a few months (or years) of this kind of thing, during which you have waded through regular changes of call-sign, you may have acquired enough knowledge to bring your light from under the bushel, and give your valued services authoritatively to the amateur world by sitting for a ticket. Whilst awaiting the result of the exam., don't lost heart, but keep on the air; you will be so popular with the gang by now, and they would hate to miss you. Having struggled somehow (God knows how) through theory and Morse, you reach the day when you are asked for thirty bob in exchange for a dinkum call-sign. But now, you have decided to put filtered supply on the old TNT, but, of course, this is only in practice, not in effect. So you get a bigger and better power tranny, a cheap 40 ma choke, and a string of small paper condensers in series. Now there is some R.F. to play with. The valve plate glows red reassuringly. That the small 1-watt grid leak gets smoking hot matters little also. An imposing zeppe can now go up, with dowel stick spreaders. Oh, no, don't worry about parafin-waxing them. Jam the aerial coupling coil up hard, so that the plate mills dip in the tank at two well-separated peaks. Pick either one. The frequency might jump about as the slack feeders swing about in the wind, but someone will be sure to hear you. Forget about telegraphy. You are now a licensed experimenter, and that means that all you are expected to do is to use telephony any time and all the time. Gramophone records? Of course. Other hams love listening to "recordings" for hours on end, and will willingly sit back and forget about their DX contests to give you

(Continued on cover 3.)

Amateur Radio

Federal and Victorian QSL Bureau

Log forms for the recent German contest may be had on application to the bureau. Reports should reach the D.A.S.D. by November 30.

3GA, late of Mernda, is now located at Curdievale, some half-mile distant from 3JA.

The Broadcasting Department of A.W.A. solicit reports from listeners on the reception of the new short-wave broadcast station VPD2, which has just been installed at Suva, Fiji. VPD2 operates on 31.45 metres from 8.30 p.m. to 10 p.m., E.S.T. Reports, which will be acknowledged, should be addressed: Station VPD2, Amalgamated Wireless Ltd., 47 York-street, Sydney.

Entrants (transmitters and listeners) in the VK-ZL 80-metre Telephony Contest, 1936, are reminded that logs must reach F.H.Q., W.I.A., Box 2127 L, Sydney, by September 23. The contest was staged during August.

Do not forget the interesting Fisk Contest, to be run during September. Rules appeared in August "Amateur Radio." All participants in last year's contest enthused over the enjoyment they derived, and this year's contest is much on the same lines. An added interest is the bonus for interstate contests on 56 MC, and the fact that, should either VK3 or VK4 win, they retain the Fisk shield for all time.

Cards are on hand at this bureau for the following VK3 stations. Prompt despatch is assured on receipt of the usual stamped envelope:—3AD, AP, BF, BS, BL, BX, CA, CK, CM, CW, DG, DQ, DS, DZ, EO, ES, ET, EZ, FM, FN, FQ, FZ, GJ, GM, GT, HB, HE, HO, HY, IL, IT, JK, JZ, JW, KG, KI, KM, KV, LG, LS, LX, LY, MX, NR, OI, OX, PA, PG, PH, PS, QO, QP, QX, RM, RQ, RW, SB, SP,

TE, TW, TZ, UF, UJ, VL, WD, WH, XB, XU, XK, YF, YL, ZB, ZL, ZC, ZO, ZW, Freeman, Dinan, Hampton, Sebire, Nye.

Spring cleaning is in the air, and all unclaimed cards will not see Christmas, 1936.

FIVE-METRE TRANSMISSION.

The following schedules will be kept by ZL3GD or ZL3XB on five metres:—

The transmissions will be from Mayfield, New Zealand, and will consist of a wave modulated at about 250 cycles per second, of the form "VVVVVVVV de ZL3GD (or ZL3XB), repeated throughout the transmissions.

The antenna, which is very directional, will be placed in a large number of directions during each transmission, and the directions will also be transmitted.

Overseas amateurs and listeners are asked to listen throughout the transmissions on 60 megacycles, and to report any reception to Amateur Radio, ZL3GD, Mayfield, New Zealand. Even if not received, ZL3GD will be pleased to hear from anyone who listens during these schedules.

The times are as follow:—0000-0200; 0600-0800, and 1000-1200 GMT on September 5 and 19 and October 3, 17 and 31.

In addition to the above schedules, instantaneous spark transmissions will be directed towards the moon on September 2, at about 1200 GMT, in an attempt to demonstrate the possibility of reflections being obtained from its surface. Such waves would not, however be receivable on an ordinary receiver, but it is hoped to be able to receive these lunar reflections in New Zealand on a special receiver now under construction.

QUARTZ CRYSTALS

Every Crystal tested to 50 watts input to Pentode Crystal Oscillator
Accurate grinding to .03 per cent. 3.5 M.C., 20/-; 7 M.C., 30/-
100 K.C. Xtals. 465 K.C. Xtal "Gates. Prices on application

PROMPT DELIVERIES

MAXWELL HOWDEN (VK3BQ) CONS. RADIO ENGR.

13 Balwyn Road, Canterbury, E.7.

Divisional Notes

N.S.W. Division

W. G. Ryan, Secretary, VK2TI, Box 1734JJ, G.P.O., Sydney.
COUNTRY ZONE OFFICERS.

ZONE 1 (Far West)—
J. Perooz, VK2PE, Hope Street,
Bourke.

ZONE 2 (North-West)—
H. Hutton, VK2HV, Byron Street, In-
verell.

ZONE 3 (North Coast)—
R. J. Berry, VK2NY, 54 Bacon Street,
Cariton.

ZONE 4 (Hunter River and Coalfields)—
S. Grimmett, VK2ZW, 161 Tudor
Street, Hamilton.

ZONE 5 (South Coast and South-
West)—

Messrs. F. M. Goyen and R. H. W. Power, late President and Secretary respectively of the New South Wales Division, were created life members of the W.I.A., as a gesture to show how much they were appreciated when working for the Institute.

The senior radio inspector, Mr. W. T. S. Crawford, presented all the prizes won at the exhibition at the July meeting.

The latest addition to the Council in New South Wales is Mr. John Moyle, who is well known as a radio journalist and an enthusiastic amateur.

The new regulations seem generally well received in New South Wales, but at the time of writing no meeting of the Institute has been held since the issuing of the amendments, so general discussion should be fierce at next meeting.

The rise in subscriptions in New South Wales has not had an adverse affect on members, for at the moment the membership is higher than for the corresponding period last year.

WHO IS THE BEST ALL-ROUND AMATEUR OPERATOR IN N.S.W.?

The above will be the subject of a competition for the W. T. S. Crawford trophy. The trophy has been presented by Mr. W. T. S. Crawford, senior radio inspector in New South Wales, to the Institute for competition amongst all amateurs in New South Wales, to decide who is the best all-round operator.

While all the arrangements have not been finalised, the following is a brief outline of the intended competition:

OPERATING TEST.

Five-minute test at 20 words per minute, including two messages as per P.M.G.'s Handbook, two minutes duration; press for three minutes.

Candidates must hold current experimental licenses. No professional telegraphists eligible. These would include present and ex-P.O. and Railway telegraphists, R.N., R.A.N., Cable, Ship Shore Station, Police, etc., operators.

In receiving, correctness, legibility and setting out to be aimed at.

In transmitting, formation, spacing and freedom from breaks would count.

A separate test will also be held to decide who is the fastest amateur operator in New South Wales.

The W.I.A. will be circularising all amateurs on the above and other matters.

ZONE NO. 3 NOTES.

The 80 MX VK2-L fone contest creating a lot of interest, as all the fone boys getting their gear perking in anticipation.

Conditions here not so good for D.A.S.D. contest. Too much VK and W QRM on 20 MX.

VK2ABD still continues to ragchew with W6BKY and other W's on 20 MX fone.

VK6HT puts in a solid 40 MX fone sig., and is very popular.

VK2CJ takes his TX. Ant. off to work 2NY duplex, and avoid B.C.L. qrm. Hi!

VK2AO has new rig. 53—2A5-210 is the line up—and has T9 sig.

VK2GM has again changed qra. Now at Wallsend.

VK2ZM bemoans the fact that he doesn't get time to have a qso.

Not much this time, so 73 to all from 2NY.

ZONE NO. 4 NOTES.

The Maitland gang at present are not very active. Most of the chaps

Amateur Radio

have gone or are going commercial, and are cleaning up their first-class commercial tickets.

A field day is being arranged in the coalfields district under the guidance of NARE, and with the help of Mr. Dixon, of Maitland, and it is hoped that interest in "Ham" work will be revived by this means.

Another new "Ham" has made his bow to the world in general, in the person of Mr. Davies (VK2BZ). He had trouble with his first rig, a 5) Trilete pushing a 45, so dished the 59 and now gives the 45 a man's size job to do with 800 volts on the plate T.N.T. The result is 6 Yanks on his first two nights. This lad bids fair to be a top notcher, and we wish him luck.

2TY.—Bob best calls and works his share of DX, and has plans of showing the BEL'S some entertainment on 200.

2CS (one Swain of old-time fame) is completing a new 200 MX rig, which promises to show points to the commercials. He "B" Class modulates a 210, and the quality is reputed to be very good.

Geoff. Young (2FN), who has moved to Orange, sent post haste for his gear the other day, so we expect to hear him on soon.

The new regulations have received general approval here, and offer a means of removing a good deal of friction which has existed lately owing to indiscriminate use of international band for musical programmes. All "Hams" in Zone 4 are requested to write 2ZW, who is anxious to have up-to-date news of their doings.

ZONE NO. 5 NOTES.

(By VK2IG.)

Things quiet on all bands at present except for the D.A.S.D. test. On 20 X quite a few Europeans heard especially during the afternoons, but fairly hard to raise.

OJ has new rig going nicely on all bands and fb fone. R-6 or so in G.

QO now building up his new rig and looks like 3LO. Hi! Frame will stand a strain of about ten tons.

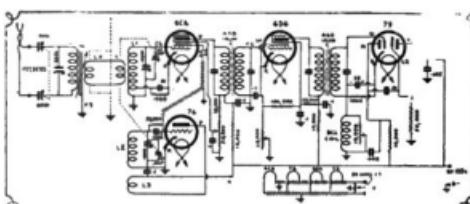
QE on 20 during afternoons. Good Europeans, but reports not so hot yet.

EU.—Don't hear much of him lately, but fone not bad; poor percentage

For all AMATEUR GEAR

Transmitter Name Plates
as Illustrated 4d each

►
Metal Condenser Scales
as Illustrated 2 3/4" diam 1/6
each



WRITE FOR SPECIAL HAM LIST!

PRICE'S RADIO SERVICE

"The Ideal Amateur Super - Het"
Published in the Sydney Bulletin
►
Complete Kit of Parts including Valves & Power Pack £12/7/6

(D. G. McINTYRE), 5 & 6 Angel Place, Sydney.

modulation, though.

YW often heard on fone; very fb usually. Trying new mike, but appears to have echo effect.

VK.—Very grl service work and not on much. Very disgusted, as can't get W.A.C. on half a watt!

IG. not on a great deal as rig gg haywire. Qso'd D4ARR about three weeks ago (before test, when he was gsa SR7-8). FB indeed.

Time scarce here just now, so till next month 73, O.M's. —IG.

NEWCASTLE NOTES.

(By 2RF.)

HAMFEST ARRANGED.

The club has decided to repeat the hamfest held last year, when 80 were present, on the 26th and 27th September next. As those present last year were unanimously of the opinion that it was one of the best week-ends they had known, the Newcastle lads have jammed their thinking caps on hard to provide an even better show this year. More details a little later.

A debate recently held between ZW, for metal tubes, and RF, against, was awarded to the latter, and some interesting points were revealed.

Code and theory classes are held every Thursday night for the benefit of associate members, and attendances show a great interest in the "ham" game in this district.

THE NORTH SUBURBAN RADIO CLUB, CHATSWOOD.

Owing to the natural growth, the above club has found it advisable to shift its QRA to larger quarters, and now houses a fine club room on the top floor of K. W. Guest's building, on the corner of Brown-street and Pacific Highway, Chatswood. Only after the club's membership has reached 200 will it be necessary to again look for more quarters. "Hams" are especially catered for, and there are still quite a number on the North Shore who have still not turned up. So what about it? For full particulars apply to the Hon Secretary (VK2VG) or the President (VK2BJ), or, better still, attend one of the meetings at the new H.Q mentioned above, on any Tuesday night from 8 p.m. and onwards, where visitors will be greatly welcomed. For guidance to the stranger, the club's location is situated on the corner of the first street past Victoria-avenue,

Chatswood, along the Pacific Highway, on the left in the northerly direction, and only three minutes' walk from Chatswood railway station.

The admissions of 2CS on the BC band are now well established, and several other locals will probably be heard there soon.

The transmission of 2CS on the BC tronic Communication DX Cup, with MT in second place and UF third. The cup was competed for on a point score basis over the past three months.

Interest at present centres in the coming hamfest to be held by this club on 26th and 27th September. A special committee is hard at work arranging details, in order to live up to the reputation gained last year. An fb week-end is promised to all who attend. Good support is being received from the trade in the way of prize donations.

A special contest for receiving members is being held in conjunction with the half-yearly contest for the DX Cup, and should test the ability of the associate members.

ZW is nearing the end of his long rebuilding job, and soon hopes to have the exciter unit, consisting of 6P6's, on the air.

BZ is on 40 and 20, consistently rag-chewing and DX.

LAKEMBA RADIO CLUB VK2LR... (Affiliated with the W.I.A.)

(By 2DL.)

Since moving to larger premises situated at the Sunrise Hall, near Canterbury railway station, the attendance at general meetings of the club has shown a marked increase. In order to celebrate the moving to new rooms, coffee, cakes and sandwiches were served at the meeting of 4th August.

This month we will have a little "scandal" by way of variety. 2KS, 2WB and 2TQ are very seldom heard on the air these sunny Sundays. The reason may be briefly summarised—hiking, National Park, YL's. 2OW celebrated his 21st birthday recently. A surprise party was arranged, at which many of the local boys attended. The younger "Hams" spent most of the time talking radio and telling funny stories, while the older ones, such as 2IC and 2LW, played poker and bridge! 2MH is having trouble in eliminating QRM from local BC

Amateur Radio

crystal sets. Shipboard romance leads to engagement! Bill Picknell's wedding comes off at the end of October. Best wishes, Bill. Very little is heard of 2FD since the addition of a further junior op. 2EH is working quite a lot on 5 MX; says he dreams 5 MX, DX, and wakes up with the hiss of super-regenerative receivers reverberating in his ear drums. 2OD and Les. Taylor, between arranging amplifiers for parties, dramatic societies, etc., spend much time experimenting on 5 MX equipment.

A club contest will be conducted while the D.A.S.D. contest is being run, the prize being a silver cup, which was generously donated by Mr. E. Waddle (VK2UU), of Nimbin, N.S.W. Enquiries relative to club the Hon. Secretary, Mr. G. Brown, 308 Canterbury-road, Hurstville Terminus. matters will receive the attention of

14 MC still remains the best DX

DX RESUME FOR N.S.W. DURING JUNE, JULY, AUGUST

(By L. Meyers—VK2KS).

band, and plenty of real DX is coming through. Conditions appear to be changing, and our American friends are not so solid as they were a few months back. Quite a number of VK's are taking advantage of the favourable conditions and running up a nice pile of DX fone contacts.

Early morn DX is coming through nicely on 14 MC, but most European stations appear to operate on the high frequency end of the band. Few VK's are heard on a morning—perhaps skip accounts for that—and it is quite a pleasure to work some real DX without the usual VK qrm. South Americans come through some mornings at S5 to 6. Have heard PY, LU, CE, CX and CM at various times, but they didn't stay long, generally between 7.45 a.m. and 8.30 a.m. This morning I heard LU5RG at S5 and CM2LO at S4. Also heard all continents between 7.30 a.m. and 8 a.m. SUICH was coming through nicely S7; he has a nice fist of the bug. He also comes through during the afternoon on fone about 2 to 3 p.m. and puts in a fine signal. Another African (FB8AB) was coming through at 10 p.m. the other night S6, but I never heard him qso any VK's, though plenty called him. A surprise last Sunday was U9MF on about 14,380 KC at midday; he was a

solid S7. HAF8C, HAF2C and HAF3D are consistent on 14 MC, the latter being on H.F. end of band.

Europeans come through early afternoon, but are dropping off. SPICM comes through around 2 p.m.; also D4TKP, who has a fine crystal sig. G2BY is anxious to qso VK stations on fone. He uses a WE4212D in single choke Heising, and has a nice fone sig. The Japs. are improving in strength, and are getting back to the strength they were about Christmas time.

American fones are dropping off, though some of the highest-power West Coast stations still romp through around the R9 mark. W6ITH appears to be the best, and his 2KW certainly makes a hole in the band. Old W6GRL was putting through nice R8 fone to-day. FK8AA is consistent. Every Sunday morning, 8 a.m., he is on SE in the centre of the band with RAC S8 sigs. He is also on 7 MC with three-stage crystal. D3CFH and D3DLC are located in Germany, and D3CFH is usually heard on about 14,350 KC with a RAC S6-8 sig. Two more countries which seldom come through—one represented by ES2D and LY1J—have been coming through about 7 a.m. LY1J has a freq. on both ends of the band, while ES2D is found about 14320 KC. VR2FF, who is seldom heard nowadays, was coming through to-day at S7.

7 MC seems to be improving lately, and the Yanks are beginning to come through better; also quite a number of XU's are heard on during the nighttime about 9 p.m.

Early morning DX is patchy, and some mornings there is not a sig. on the band. Usually there are a few Japs and PK's coming through.

JULY AND AUGUST.

Generally DX conditions have been changing during the past months. 7 MC has been improving, whilst the Europeans on 14 MC have been coming through extremely well during the mornings. On 14 MC the afternoon DX has been dropping off, both European and American stations being weaker. The best W fones appear to be W6ITH, W6BKY, W6AM and W6LLQ. XE2AH puts in a fine fone sig.; he is often R9 to MAX. After 7 p.m. there is not much doing, though around 9 p.m. a few East

Amateur Radio

Coast W's come through nicely. Occasionally KAIME and KAIAK are heard on one, and they come through very nicely. Europeans are very scarce during the afternoon, but from about 7 a.m. till 10 a.m. they just roll in. European ones are coming through. The best heard were G5ML, R7 to 8, and G6RL, R7.

Also heard others, but I could not understand their lingo. Hi! At about 9 a.m. South Americans came through nicely. This morn PY2QD and PY2MO were a good R8. I was quite surprised. Have not been able to hear any Africans except EA8AO, about a week ago, at 7 a.m. Conditions of a morning seem ideal for DX work. For three mornings I could not hear any VK sigs. except VK2AS, about three miles away, but I could hear the DX calling VX stations. It is certainly fh with no grm. On T Mc conditions have been improving steadily, and the W's are coming through during the evenings quite solid. After 11 p.m. the Japs. often reach R8, with a good sprinkling of XU's. The best XU's are XU8HW, XU8RR and XU8UM. XU8RR has a habit of signing as VU8RR. Early morning DX, though, is not so good, being very patchy, and the Europeans do not compare with 14 MC. On MC there is quite a bit of unusual DX around. CP3ANE is poking through at R5 quite consistently. OZ2B, on 14,002 KC, is on nearly every morning at 7.30 a.m. YM4AAA occasionally, LU8EN at R5 to 6, lots of G's, PAO's, etc. The D4's are getting as common as G's these days; perhaps they are getting ready for their DX contest. Heard from FTJJDY the other day an interesting piece of news. I have often wondered why there were two prefixes for Noumea—FT and FK8. There are only two "hams" in Noumea—FK8AA and FTJJDY. It appears that FK8AA, who used to be FTCGV, had to torment the French authorities to get his call, so while he was waiting he used FTCGV. He waited about five years and he got FK8AA. About 12 months ago FTJJDY wanted to get his license, so he wrote to France, and he is expecting his call back soon—about five years' time—so in the meantime he is using one of his own — FTJJDY — FY because FK8AA used it; J and D are his initials, and T his YL's initial! They don't have to sit for any examination

either. Guess all the Joeys will be moving to Noumea. Hi!

I would appreciate it very much if any "ham" would shoot along any DX news he may gather or any DX news he has heard or worked and I'll put it in the notes. Well, guess that's about the lot at the moment, so cheerio and DX till next month.

NORTH SHORE ZONE.

2ACJ will be shortly going QRO with a 10 in the final. 2ACL is consistent on 80, with push-pull crystal oscillator. 2BJ had trouble with speech amplifier, but has now pulled out most of the bugs. 2DR had downward mod., with transformer coupling. Go back to choke, Don! 2FV's antenna came down, further delaying his comeback. 2HA is rebuilding with rack and panel, and will use 59, 6P6 and 210. 2HL has completed his new rig, but wants to make 5 MX his rendezvous for the next few months. 2HY has trouble with BCL QRM; the higher the frequency the worse the QRM. 2HZ is rebuilding with rack and panel, which will house 6A6, 6A6, 6P6/6P6, 830B. His temporary rig at present is 47-210 on 80, with grid bias mod. 2IP has trouble with joeys, which spoil his QRI. 2LD is now on top of the 40 band with clickless keying, due to the effective keying filter. 2LZ was busy with the German contest, working plenty of D's on 20. 2NN finds his way down to 20 through various channels other than the correct ones (long grid returns, etc.). 2PV still manages a QSO on 40 amongst the din. 2SS will now go on crystal, since his S.E. has run away from him. 2SV is quiet in Roseville. 2VE is QRL work. 2VI keeps Chatswood going on 40. 2VL is also QRL. 2VN considers a 60-foot stick as an advantage. 2VP shifted his QRA, but cannot come on now, as there is no place for an antenna. Harder problems have been solved, George! 2VQ is making a good score in the German contest; he prefers the single-wire matched impedance to the doublet at the moment. 2XC is heard once in a while. 2YA has become engaged. An auction sale will take place as usual. 2YC still complains about QSL card recipients. It soon won't be fashionable to QSL Jim, so you can expect a slack time shortly.

Victorian Division

VICTORIAN KEY SECTION NOTES.

(R. Were. VK3DP.)

At the August meeting the attendance was much larger than usual. Several members had questions to put before the meeting on troubles and worries in their rigs. Mr. Cunningham's problem in particular caused some very interesting rag-chewing. 3XZ, after scribbling all over the blackboard, finally solved the problem. It was very interesting indeed, and proved that most hams do not know how electrical instruments operate. 3BQ's problem was left over till the September meeting, as the members were too exhausted.

On the 6th September the Oofs (U.H.F. Section) are staging a 56M/c Field Day, and have been challenged by this Section. Both Sections have some very keen fellers amongst them, so it should be a very interesting day.

The amount of QRM prevalent during the last couple of week-ends shows that the D.A.S.D. Test is being well supported by the VK lads. Condx on 7M/c are not so hot, so 14M/c is getting most of the work. The ZL's seem to be working the D's and Europe, ans like a man with no arms.

The VK-ZL contest aroused a great deal of interest, although it was unfortunate that at the beginning conditions were not at all good, heavy qrm spoiling the enjoyment of the contestants.

Now for some doings:-

3CE.—Roy is not doing much at the moment, mostly on Sunday sheds. Built a new RX, and had a lot of trouble getting it to perk.

3WN.—Jack reckons that everyone picked his xtal freq., hi! He's got 'em beat, anyway, 'cause he has a SE osc. as well.

3HN.—Mac has moved into a new shack and is on Cw, as he has not been able to get fone going yet.

3HR.—Busily engaged building an A.C. rig, consisting of 2 2A5's osc. and a 6P6 as suppressor grid modulated PA input?

3NN.—"Herb" is putting a very nice sig. out now, es is contemplating building another xmitter, having one

for 3.5 mc and the other for 7 and 14 mc. F.B., Herb.

3LH.—Back in Merbein, putting out a hefty carrier, wid very poor modulation.

3EP.—Ted has changed his 47 CO for a 46, es says it beats the 47. Gave the ZL contest a go.

3AI still more or less inactive.

3CH and 3PY haven't been heard of since (as 3WE would put it) "Adam was a pup." Hi!

3ZK has a new name, "Strikey Jimmie," hi! Busted his xtal, and went SE for contest. Very Q?L. Jimmie's proverbs.

"Something's bound to happen."

"We'll try anything once."

"You're telling me."

3HX also very Q?L, and is playing round with power trannys, etc.

There will be one or two new hams on the air up this way soon. Roth Jones, of Bendigo, Jock Speer, of Corop; George Downing, of Stanhope, sat; but don't know if he passed. Tom Speer sat but failed, but you cannot keep a good man down, so he's having another go.

7YL created a sensation on the 80mx band one night, when she called CQ. Half the 80mx boys called her, but the lucky man 7JB. Do it again, Joy, so as we can sit back and listen to the boys calling. Hi, hi!

These notes appear to be rather lengthy, and we hope the Editor is in a good mood, so 73's gang.

NOTES FROM U.H.F. SECTION MEETING AUGUST 18, 1936.

(By VK3DH.)

The meeting of this section took place at the usual W.I.A. address on Tuesday, August 18.

Present were:—TH (chairman), QR, KQ, VHD, Junr., OT, XM, UR, CR, LK, DH, and Messrs. G. Davies, D. Ayres and C. Harvey.

XM and OT paid us the honour of a visit and were suitably introduced by KQ, then suitably welcomed by all present. We would like to see you some more, O.M.'s!

The subject of "Superregenerative Receiver Interference" was brought up by KQ, and a few suggestions were put forth. An explanation of the trouble may be a help here. At the present time the position is such that very frequently communication between two

Amateur Radio

Box Hill. Ray's ant. down for third time this year.

3RX shifted QRA again. Trying to beat the landlord. He has no time for radio, as he is rushing a new YL. Nice work, om, if you can get enough of it.

3BQ still hoping to build new xmitter.

3NY too busy chasing unfinancial members to get on the air. The W.I.A. is your Institute. Do your bit by paying your sub. and let NY get on the air.

3XZ scrapped zeppe feeders for Radio all-band single-wire feed ant.

3UK building two new transmitters. First working on 80 and 40, second on 20 and 10. Tube line up for each. 53-TBO4/10-5OT. Change to any band by flicking one switch.

3CX has new 40ft. pole—may work some DX soon. CC tritet will be heard soon on 14 and 28M/c. Tube line up. 59-801-242A. Has very crook note at present!

3OC, the recently married one, has been trying to stop RF from lighting up the neighbour's bedroom. Has a new ant. on his mind, and says the house looks like a set-up for the man on the flying trapeze.

3DP won two RF chokes in the last contest, and found that someone had swiped 'em.

3YP works 3CX on 10 and 20.

3KE gets on the air when not trying to find new QRA (?) of financial members, so they will get their "AMATEUR RADIO."

3DF-3TU built new xmitter 59 regen. tritet, 802, 45's push-pull, but can't get 802 to double to ten with the drive from the 59 quadrupling.

South Australian Division

(By VK5KL.)

General meeting, July 15th, was nearly an all-night sitting, due to the lengthy discussion on the new regulations which have been received. A delegate has been sent to the RI to get a clean-up on some points not quite clear. When at last Mr. Buckenfield held the floor, he rose to the very high standard of all of his lectures, and explained very plainly "Methods of Applying Regeneration to Amateur Receivers." The DX contest is well in hand, and should be a success befitting for such as South Australia's Centenary.

HAM SCANDAL.

5HR was QSO, Bill, es he tells me he was gng to dance to see his 2nd op. (a male); oh yeah, tell us another one, do! Bill's genemotor and small rig sure gets out. was QSO 3ZK one nite on 80 mx, es I believe Jimmy has been osculating sum of the YLS in Swan Hill. Take care, now.

Took a visit to 5LJ's wid 5HD; just arrived when 5PN came along (making out he was reading the A.C. supply meters. Quite a hamfest. What! 5KO has a 16-tube super Hammond-Pro. or sum Yankee job. No wonder he can hear sum dx on ten. 5HW from his home in the hills still works dx; never hear you here, Harry (you old fox).

5HM is a new chappie to swell the qrm at Cowandilla. No wonder 5MK's looking downhearted; his RKZO is just a wee bit flat, Jock, es then 5BM comes on with his spark days QRI wid abt 2 amps. in the sky, just to QSO 5BC, who is about 3 miles away. Hi! 5CR is using 59-electron coupled osc, but wud swear it was xtal, F.B. Charlie. 5FM's rig luks nice now wid a meter in every stage, doing well in DJDC test, too. 5MZ has forsaken VK5 for VK2, where he will study for commercial ticket. Gud luck, Jack, es take care of urself 5JC also in Sydney.

5WK is using 9-tube super xtal filter; shudn't get any QRM now, Nobby. O.B.

5OJ.—Here's a new chappie to QSO. QRA, 5 Dudley Avenue, Prospect.

5LD still persevering wid Telefunken modulation. 5ZY is on 5 metres.

5RD promises to have a xtal rig going on this bnd soon. F.B., Don.

5ZX busy rebuilding.

5ZL hasn't been on much yet, having trouble wid power supply.

5KG.—Get on nw agn, when qrm from local motor body firm is off. Have had the pleasure of testing out a 6P6 as tritet osc. es works very F.B.; also am trying a new tritet circuit, which saves us xtal; gess this will be all the rage sn.

"Hams, broadly speaking, are divisible into three classes: the key men, fone hounds, and gramo. grinders."—Item extracted from pertinent remarks of one peeved OT at a recent VK4 meeting of hams.

Tasmanian Division

(By VK7JB.)

The August meeting was held on the 4th inst. at the club rooms. Owing to the cold and wet weather, the attendance was poor, which was rather disappointing in view of the very interesting lecture delivered by Mr. G. Larsen on "Heising Modulation." All present appreciated the lecture, and should benefit from same. The Council are at present faced with the problem of nominating six members for the Vigilance Committee to keep an eye on the naughty boys. The applications at present are conspicuous by their absence. Only four applicants up to date seems like the old "guilty conscience" is showing up.

Two more members have obtained their A.O.P.C. in the July sitting, namely, Messrs. T. Allen and D. Hildyard, the former being the Junior op. and brother of 7PA. Wish you luck, boys. More QRM. Hi!

MEMBERS' SCANDAL

Our lady op. first (apologies, Keith) 7YL struck trouble with xtal oscillator, and after nearly ruining a perfectly good xtal in a 53 exciter, has changed to a 2A5 pentode oscillator, working quite a few VK3's, 5's and 7's on fone. A bug is being installed for C.W., so look out for strange noises, and don't be alarmed if you hear some new VK7 calls, boys. Hi!

7CT doing well on QRP self-excited rig, even if it is only rebuilding every now and again.

Make up your mind, Terry ob, I want a qso hi. Understand you are going to put xtal control on 7BJ's mo 'bike om. 7CL on fone es c.w. Mostly former hi. Making room for an 800 and a pair of 866 rectifiers, so gess the dx contest in Oct. will be well represented in VIH. Who is the Y.L. op. Merv.?

7KV.—Adding extra doubler for 5mx, so as there will be no argument as to off freq. location. Reckon it's that extra 500 points in the Flak contest, Keith.

7PA regularly heard on the 200 mx band on Sundays. Not so active on S.W. lately, QRL grinding xtals and installing 800's. Wow!

7JH working W's and VE's on 20 mx with three stage E.C. rig. Changing to xtal again shortly.

7LJ heard on 40mx fone recently. F.E. as usual.

At long last the "Queen Mary" is afloat. Our sec., "Chum" Moorhouse, informs me that his 7-tube super has at last condescended to behave like a lady, hi!

7JB still busy, getting ready for Fisk and October DX contest. Sa, boys, we want to pull the Flak trophy off this year, what sa?

Cards are still coming for 7BB, our mystery station. Same can be had by application of "licensee."

7CK heard and QSO'd recently on 40MX. Glad to hear you back again, Poley om. Using water-driven generator for power, and every time the cow goes for a drink the power drops .5 of a watt, hi!

7RC on 40mx fone, using RK20 in three-stage xtal rig, with suppressor grid modulation. Takes a great delight in talking 7XL down.

7XL heard for last time last Sunday a.m. Going to VK3, I believe. Sorry to lose you for Fisk Contest, George.

7AM.—No news. What's in the wind, Les, 852's?

7RK.—Putting a nice hefty TG sig. down here. What about some fone, Ray om? 7YL wants a QSO, hi!

7AB.—On 80mx fone. Can't understand how you boys get away with fone on 80mx. Guess the BCL's are more amiable up there.

7LZ.—DX quiet, judging by the last batch of cards, Col. Condx punk here also.

I understand the northern gang are contemplating a club room for social activities, fb. We will come up es see you sometime.

7BQ heard on 40mx cw. Hope to QSO soon, Len om. Haven't had the pleasure as yet.

Well, that's about the lot for this month, boys. In conclusion, I may state that I hope to have notes concerning 7WI for next month. The transmitter is at present being rebuilt by Mr. T. Hopkins (3 stage xtal). Sec. "Chum" Moorhouse threatens to disturb plenty of ether with it. So until next month, 73's.

Amateur Radio

are, having no mushy background of cars, dairies, refrigerators, etc., to work through.

3B4 has not finished rebuilding his transmitter yet.

3B6 is hard at work on a new receiver. From a reliable authority, we hear it is a beauty, too.

3C1 mixing his golf with radio. At present golf seems to have the upper hand. We had the pleasure of a yarn to him on his recent week in Melbourne.

3C4 has quite settled down in his new home now. He is rebuilding his transmitter. The 53 C.O. and also the P.A. are finished, but he is having a little difficulty with his buffer.

3C5 is also rebuilding. He has invested in one of the new 804's.

3D3 is "harnessing the winds of heaven," and has his propeller hitched to a husky generator.

3D6 is making a grand job of S/L VMC4. VMC1 will have to look out or their position as crack section will be threatened.

3D4 is back again, having finally got settled into his new shack. His return will help to strengthen VMC1 forces.

3F9 has had the bad luck to have another bout of 'flu. 3Z1 put out the B/C from 3F9 when up there recently. It was a refreshing change to be able to copy all VMC signals without having to "fight through" the mush of local QRM.

They say troubles come in threes. 3Z1 disputes this, and here is the reason why. In one week he had two punctures, one smash and one very

near go when the steering jammed. In the previous week he was stopped by the police patrol for driving without a decent tail light. (It was O.K. when 3Z2 and 3Z1 left the K.P. meeting. Hi!) For thrills, why, take up Radio?

4th DISTRICT NOTES.

Fairly good use of the 3.5 MC band of frequencies has been made in VMD, but with the approach of summer and static those in the north will rely on 7 MC frequencies for communication with the remainder of their section. In some localities 3.5 MC is renowned for its bad type of line noises and mush, which at times hinders good contact. We are looking forward to further frequencies being allocated in the 7 MC band to provide more suitable channels of communication during the summer.

4B1 can occasionally contact 4Z1 direct, but most times 4B1 is worked through 4A5, who contacts both stations with ease. A channel exists between north-west and Melbourne via 4B1, 5A2 and 1A1. This is an important link, and could be made good use of when occasion demands.

4Z2 and 4B5 have private watches handling test traffic and general procedure discussions; likewise 4A5 and 4A2. 4A6 has returned to the active list and is using 59, 45 and P.P. 2105 to advantage. 4A4 is off for the moment busy with work. 4B3, we learn, has just gained an "A" Class Pilot's License, and we wish to congratulate him. A new reservist is VK4AM, of Rockhampton, a coastal town in the north.

HAMS!!!

See us for all your requirements.

SPECIAL NETT PRICES TO ALL HAMS.

Write or call for price list.

ISOLANTITE SOCKETS 2/-

MORSE KEYS, Good Quality 30/-

P. & L. WIRELESS SUPPLIES PTY. LTD.

31 Hardware Street, Melbourne, C.1 (Note New Address)

OPEN FRIDAY NIGHTS

Phone F 4323

Amateur Radio

(Continued from page 14)

tion method doesn't do for a pickup, so you put in some form of grid modulation and a stage or so of gain. Now you are able to show the broadcasting stations just how they should behave. Camping on 40, with excursions to 20 (always when the DX peaks are best), you run long sessions, not forgetting the studio chimes, and calls to admiring SWL's here, there and everywhere. When making announcements, it shows the hall-mark of good breeding to have a noise background, at a high level, of chattering flappers, who come at intervals to the mike and yell endearing terms to boy friends surrounding the other guy's shack. The boy friends, too, they don't know a thing about ham radio, and like to be paid the honour of being invited to "broadcast." A nice noisy broadcast receiver in the next room, with the door wide open, adds to the general atmosphere. Don't forget to emulate the wise guys. Show that you are a knowing fellow, and secretly are an old hand at this radio game, by passing frequently such remarks as "That's the dope on that," "It's yours, son, take it away." Never use plain English when changing over to receiver, but use the clever staccato "Kay OM." And remember, that the acme of good phone operation is always typified by a continual interpolation of the words "High, high!" It is so commonplace to just laugh naturally about anything. If the time should come, as it will, in answer to a lengthy phone CQ, somebody answers you snappily on the key, just ignore him. This guy doesn't know enough about the game to be using anything so retrograde as Morse communication in these days. If he should have you more or less cornered (there is nobody else on the band, and you couldn't possibly miss him), go back with a plain admission. That station calling me on the key. Sorry I can't read you. Forgotten that stuff long ago." So many do it, and it makes quite an impression. I could go on for hours, but by now you will be immensely popular with the gang, and won't need any further instruction. The rest can safely be left to the Department—and the new Vigilance Committees!

Hamads

ATTENTION! ATTENTION!
COBURG RADIO, VK-3JH.
(Bob Hurley, late Veall's and
Homecrafts.)

129 Bell Street, Coburg, N.13.
Near Rly. Stn. — 'Phone B'wick 800.
Radio Sales and Service.
Specialists in Quality Repairs.
New and Secondhand Gear Bought and
Sold.
Best Wholesale Prices to all Hams.
P.A. Amplifiers Hired and Built.
We have ALL THE LATEST DOPE
on everything and all the latest
Gear, and are Specialists in EQUIP-
MENT TO ORDER.
OUR MOTTO—100% SERVICE.

BRIGH STAR RADIO, VK3UH,
517 Lower Malvern road, Glen
Iris, S.E.6. Crystals ground from
best Brazilian Quartz and tested to
50 watts input to pentode oscilla-
tor accuracy \pm 3Kc, 200, 160 metre,
15/-; 80 metre, 10/-; 40 metre, £1/5/-;
465 KC, xtal gates, £2; Plug-in
type holders, 7/6 each. Power
transformers 300 watt, 2000 volts
amps, £5; Filament Transformers,
up to six windings, 15/6. Receivers
and Transmitters constructed. Call or
write above address. Satisfaction guar-
anteed.

FOR SALE.—Transmitter Parts—
40 MX, XTL, 920V Trans., 210 Tubes,
Chokes and Filters, Weston Meters
Cardwell Conds., Monitor, etc. No
reasonable offer refused.—J. Murray
(VK3JY).

SELL.—One 211D and Filament
Transformer for same, and 2 866's;
all as new. £3 lot.—Write VK2OH.

WANTED TO BUY.—1 Alternator,
230V (or what have you), from
.1 to .5 k.w.; self excited, if possib'e.—
Write T. Baker (3DK), Railway
Boonoonar, Victoria.

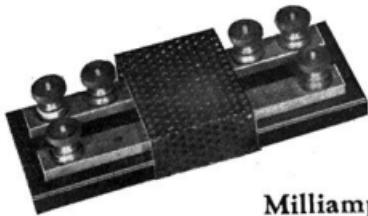
XTALS by W9ADN. 80mx & 40mx £1
R.F. chokes by ON4DJ similar national
pic wound 4 section, 175ma pigtail. 5mx 2/6;
10/200mx 3/6; info VK3RJ 23 Landale Street,
Box Hill, E.11

FERRANTI

2½" Instruments



Increased Ranges
For Direct
Current



Ranges
Milliamperes

0-5
0-50
0-100

Volts
0-10
0-50
0-250
0-500

Great increase in ranges
of 2½" D.C. Moving
Coil Instruments by the
above up-to-date ap-
paratus.

The set comprises the
well known Ferranti 2½ in.
Moving Coil D.C.
Meter No. 27F. Polished
black cases with appro-
priate shunts, resistances
etc. to give readings in
Millampere and Volts

NOYES BROS.

(MELBOURNE) PROPY. LTD.

597-603 Lonsdale Street

Telephone Central 10105

Elsum Printing Coy., Box Hill.